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ABSTRACT

A statewide survey was conducted by Georgia Assessment Project, Georgia State University during 1992 to determine if Georgia employers and educators agreed with Georgia policymakers that each of the 28 desired student outcomes (DSOs) was important to success in the workplace. Of 4,041 surveys mailed to a representative sample of educators and employers, 1,103 surveys were returned and analyzed. On the whole, both employers and educators rated all DSOs to be of moderate to great importance in obtaining and advancing in employment. Both groups also indicated that some DSOs of moderate importance in obtaining employment might be of great importance in advancing in employment. In all cases, educators consistently rated DSOs at the same level of importance or of slightly higher importance than did the employers. The DSOs of personal hygiene and appearance, punctuality, dependability, a positive attitude, successful on-the-job task completion, and respect for authority were deemed most important in obtaining employment by both employers and educators. Both rated dependability, a positive attitude, punctuality, and successful on-the-job task completion to be the most important for advancing in employment. In fact, these survey items were rated even higher for advancing in employment than they were for obtaining employment. On the whole, employers and educators rated current job applicants as satisfactory on all DSOs but two. There seemed to be some differences in the way respondents rated the DSOs based on their group membership: region of state, race/ethnicity, and gender. (Appendixes include desired system characteristics, action commitments, instruments, and sampling techniques.) (YLB)

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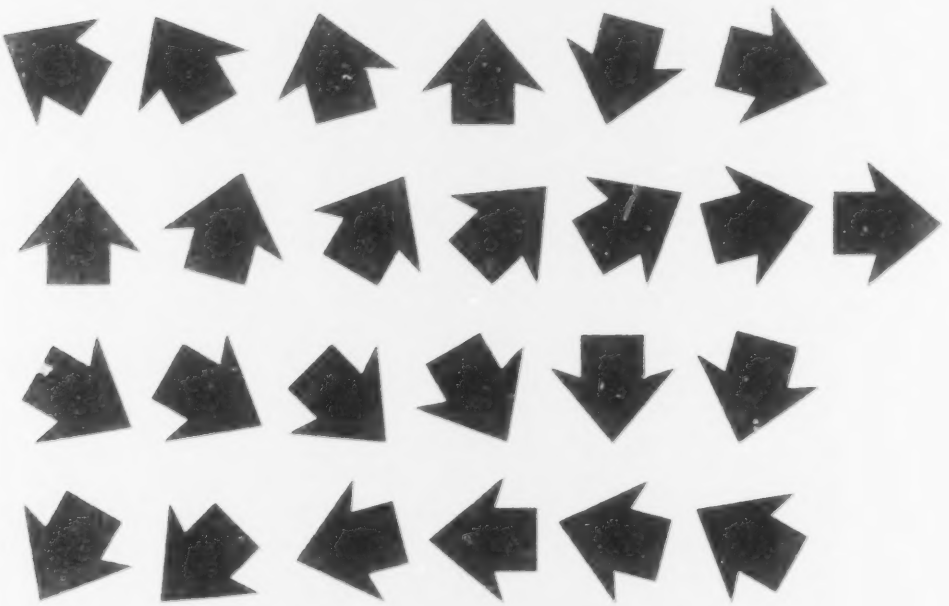
ED 391 881

## A 1992 VALIDATION SURVEY

# WHAT SHOULD GEORGIA STUDENTS KNOW TO BE SUCCESSFUL?



## GEORGIA COUNCIL ON VOCATIONAL EDUCATION

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A 1992 VALIDATION SURVEY:

DESIRED OUTCOMES
FOR STUDENTS OF
GEORGIA VOCATIONAL-TECHNICAL PROGRAMS

# WHAT SHOULD GEORGIA STUDENTS KNOW TO BE SUCCESSFUL?

December, 1994

GEORGIA COUNCIL ON VOCATIONAL EDUCATION

Report prepared by:
Dr. Gail Fletcher, Executive Director, GCOVE

Survey conducted by:
Georgia Assessment Project, Georgia State University

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# Acknowledgments

Sincere appreciation is expressed to the 1,000 plus employers and educators who took time from their busy schedules to rate the importance of the proposed desired student outcomes for Georgia's vocational-technical students. And special thanks are offered to those individuals who chose to include written comments on the survey to clarify their concerns and hopes for students who will be making the transition to the workforce.

GCOVE also wishes to thank the members of the Agenda '95 Committee for their assistance in designing and critiquing the survey instrument which was used to validate the desired student outcomes.

Special appreciation and thanks are extended to Annecia Berkley who created the graphics and visual displays and made this a much more readable and interesting document.

*Gail M. Fletcher, Ph.D.*
*Executive Director*
*Georgia Council on Vocational Education*

## DESIRED STUDENT OUTCOMES

(See the Appendices for detailed DSO statements)

**KNOWLEDGE BASE**

1. Computation Skills
2. Computer Awareness
3. Scientific and Environmental Concepts
4. Understanding of Entrepreneurship, the Free Enterprise System, and International Competition
5. Concepts of Technology

**COMMUNICATION AND INFORMATION-GATHERING SKILLS**

6. Communication
7. Written Communication
8. Reading Comprehension
9. Communication with Charts, Graphs, and Displays

**PERSONAL DEVELOPMENT SKILLS**

10. Positive Self-Concept
11. Adaptability
12. "Learning to Learn"
13. Initiative
14. Problem-solving
15. Creative Thinking
16. Interpersonal Relations
17. Balancing Commitments
18. Negotiation Skills

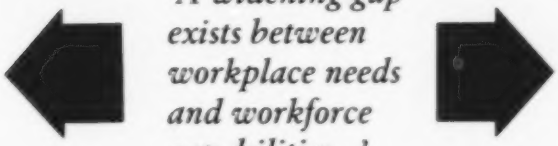
**EMPLOYABILITY SKILLS**

19. Career and Education Planning
20. Job Application/Resume Preparation
21. Interviewing
22. Work Related Values
    a. Dependability
    b. Punctuality
    c. Respect for authority
    d. Positive attitude
    e. Personal hygiene and appearance
    f. Successful on-the-job completion
    g. Planning for career growth and development
23. Understanding One's Role within the Organization

**TECHNICAL SKILLS**

24. Awareness of Computer Applications in a Specific Occupation
25. Knowledge of Proper Use and Care of Equipment, Instruments, Tools, and Materials
26. Knowledge of Relevant Federal and State Laws and the Regulations of a Specific Occupation
27. Specific Technical Skills of the Occupation
28. Process Skills - Organizational Context

## WORKPLACE NEEDS VS. WORKFORCE CAPABILITIES



*'A widening gap exists between workplace needs and workforce capabilities...'*

The widening gap between workforce needs and workforce capabilities is an issue that is widely recognized across our nation. The public providers of vocational-technical education and training in Georgia began to meet this issue head-on in 1988 through the combined efforts of an interagency team, known as the Agenda '95 Committee. The Georgia Council on Vocational Education (GCOVE) sponsored a series of meetings which enabled staff from several state agencies to come together to examine more closely what students of vocational-technical education should know and be able to do to be competitive in today's workforce. Committee members also discussed ways to develop a more coordinated, "seamless" system of education in Georgia--that is, a system that provides a smooth transition from grade level to grade level, high school to postsecondary education, and from education to work.

The Georgia Board of Education, the Georgia Board of Technical and Adult Education, the Board of Regents of the University System of Georgia, and the Governor's Employment and Training Council endorsed the recommendations of the Agenda '95 Committee. The Boards agreed to develop a more student-centered vocational-technical education system and to pursue, either individually or collectively, several action commitments to put into place the 28 mutually agreed-upon desired outcomes for students of vocational-technical education. The work and recommendations of the Agenda '95 Committee are documented in the GCOVE publications, *An Agenda for Vocational Education: Shared Goals for the Next Five Years* (1989) and *Agenda '95* (1990). For more detailed information on the work of the Agenda '95 Committee, see Appendices A and B at the end of this report.

*...the Boards agreed to develop a more student centered vocational-technical education system*

In Appendix A, a listing of the members of the Agenda '95 Committee may be found. Appendices B1 and B2 contain information about desired education and training system characteristics and the action commitments endorsed by each of the State education and training agencies.

As a part of the agency action commitments, GCOVE agreed to coordinate a statewide survey of Georgia employers and educators to validate the importance of the desired student outcomes (DSOs). This report focuses on the results of that survey.

## The Desired Student Outcomes (DSOs)

The four Georgia education and training agencies and their respective boards recognize that each vocational-technical student, regardless of individual goals, needs a core of skills to prepare him or her for employment and continued learning and training. To this end, they endorsed the 28 desired student outcomes (DSOs) recommended by the Agenda '95 Committee. This core of skills was organized into five broad areas which are annotated on the next page. The desired student outcomes are applicable to all levels of vocational-technical education and training, including both secondary and postsecondary levels. The acquired skills are considered to be transferable from one context to another. The sophistication and expertise required in each desired outcome, however, may vary with the level at which the program is directed. This means that the desired student outcomes are purposefully worded in broad terms so that, in essence, they can apply to any career path or educational level. (See page ii for a complete listing of the 28 desired student outcomes).

These skills are very similar to those identified in the (U.S. Department of Labor) *Secretary's Commission on Achieving Necessary Skills (SCANS)* report which was also released in 1990. Since that time, a number of other state and national reports have identified very much the same skills as being important to becoming an optimal employee and in making a smooth transition from school to work.

*...each vocational-technical student needs a core of skills to prepare for employment and learning*

## DESIRED STUDENT OUTCOMES

| DSOs | |
|---|---|
| GENERAL KNOWLEDGE BASE | Including computation skills, computer awareness, scientific & environmental concepts, understanding entrepreneurship, the free enterprise system, international competition, & concepts of technology (Includes DSOs 1-5) |
| COMMUNICATION & INFORMATION GATHERING SKILLS | Including communication skills, written communication, reading comprehension, & communication with charts, graphs, and displays (Includes DSOs 6-9) |
| PERSONAL DEVELOPMENT SKILLS | Including a positive self-concept, initiative, & skills in adaptability, "learning to learn," problem-solving, creative thinking, interpersonal relations, balancing personal & work commitments, & negotiation. (Includes DSOs 10-18) |
| EMPLOYABILITY SKILLS | Including career & education planning skills; job application resume preparation skills; interviewing skills; understanding one's role within the organization; and work-related values, such as dependability, punctuality, & respect for authority (Includes DSOs 19-23) |
| TECHNICAL SKILLS | Including awareness of computer applications in a specific occupation; knowledge of proper use & care of equipment, instruments, tools and materials; knowledge of relevant federal & state laws & regulations of a specific occupation; specific technical skills of the occupation & process skills-organizational context (Includes DSOs 24-28) |

*...the desired student outcomes can apply to any career path or educational level*

## Determining the Importance of the DSOs

A statewide survey was conducted during 1992 to determine if Georgia employers and educators agreed with Georgia policymakers that each of the 28 DSOs is important to success in the workplace. GCOVE contracted with the Georgia Assessment Project at Georgia State University to design and conduct a validation survey of the desired student outcomes on behalf of state education and training agencies. The DSO statements were arranged so that employers and educators could indicate the following:

(1) the level of importance that they placed on each of the DSOs in ***obtaining employment*** by using a four-point scale of "no," "little," "moderate," or "great" importance,

(2) the level of importance that they place on each of the DSOs in ***advancing in employment*** using a four-point scale of "no," "little," "moderate," or "great" importance, and

(3) what they perceived to be the ***preparation level of current applicants*** using a four-point scale of "no," "poor," "satisfactory," or "excellent" preparation.

The last section of the survey provided space for survey respondents to comment on the DSOs, if they so desired. See Appendix C for a copy of the DSO validation survey instrument and survey instructions.

The following section of the report describes the survey and the self-reported characteristics of the respondents. Subsequent sections present the results of the survey: the importance of the Desired Student Outcomes in obtaining and advancing in employment, how well-prepared current job applicants are perceived to be, and if the respondents answers were influenced by their self-reported group affiliation. A discussion of the survey results comprises the final section of the report.

# DSO VALIDATION SURVEY

DSOs NEEDED TO OBTAIN EMPLOYMENT

Respondents rated the importance of desired student outcomes by determining

DSOs NEEDED TO ADVANCE IN EMPLOYMENT

DSO PREPARATION LEVEL OF CURRENT JOB APPLICANTS

## THE SURVEY

The validation survey form was constructed from the individual desired student outcome statements developed by the Agenda '95 Committee--although some of the original DSO statements were worded so broadly that they had to be subdivided into more than one survey item. However, the original wording that was agreed upon by the four state education and training agencies and their respective boards was retained. As noted previously, a copy of the survey may be found in Appendix C.

The Georgia Assessment Project (GAP) mailed a total of 4,041 surveys to a representative sample of educators and employers across Georgia. (See Appendix D for a detailed explaration of how participants were selected to receive the survey.) Surveys were returned to GAP for data entry and statistical tests. GCOVE staff then used the descriptive statistics and chi square analyses provided by GAP to analyze and interpret the survey data. GCOVE staff also analyzed the voluntary written comments.

### Who answered the survey?

Of the 4,041 surveys that were mailed, 1,103 surveys were returned and analyzed. Although the response rate was low (27%), surveys were returned by 457 employers and 646 educators in roughly equal proportions from across the state.

Each employer and educator was asked to complete and submit a one-page biographical sheet along with the survey. Based on this information, a general profile of the respondents emerged. (See Appendix C for a copy of the biographical questionnaire.)

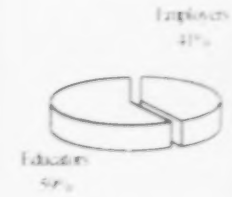
**Geographic distribution.** Slightly over one-half of the employers and educators in each group are employed in north Georgia (which includes Atlanta). The remainder of the respondents are split fairly equally between middle and south Georgia --although slightly more of the educators are employed in south Georgia than are the employers. Slightly more of the employers work in urban communities than do the educators.

**Demographics.** Up to 90% of both education and business respondents are white and over the age of 36. One-third of the respondents are over the age of 50. However, 77% of the

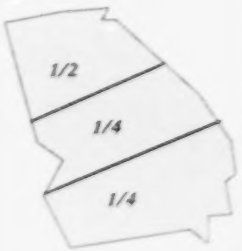
*Who answered the survey?*

*-- 1,103 Respondents*

- *457 Employers*
- *646 Educators*



- *Slightly over 1/2 of each group are employed in north Georgia*
- *The remainder is split fairly equally between middle & south Georgia*

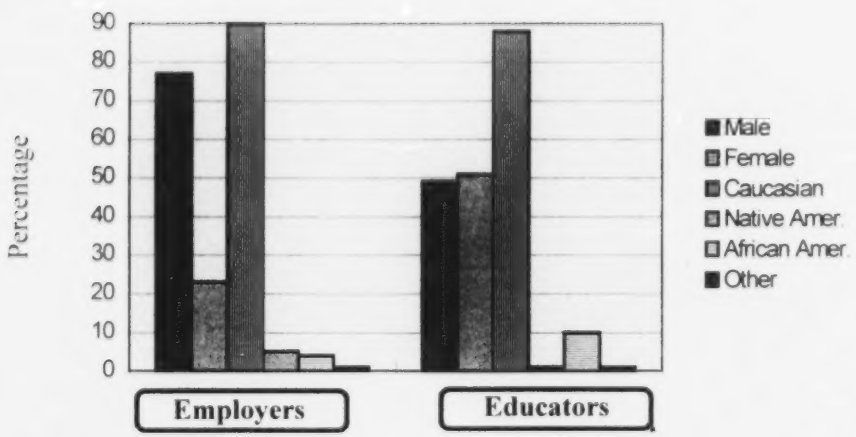


employers responding are male, while only 49% of the educators are males.

**Educational background.** Both groups reported high levels of formal training. None of the employers reported having less than a high school education and approximately 90% of them had completed some level of postsecondary education. Over 75% of the educators reported that they had completed some graduate work beyond the four-year college baccalaureate level.

**In-field employment.** Approximately 90% of both groups reported being employed in their present field for six or more years; however, 48% of the employers reported having been employed in their present field of work for over 20 years compared to 38% of the educators. Almost all of the educators (94%) and about two-thirds (63%) of the employers indicated that they are employed in the field of their formal education. One-third of the educators indicated that their original field of study was education or educational administration. The disciplines of mathematics,

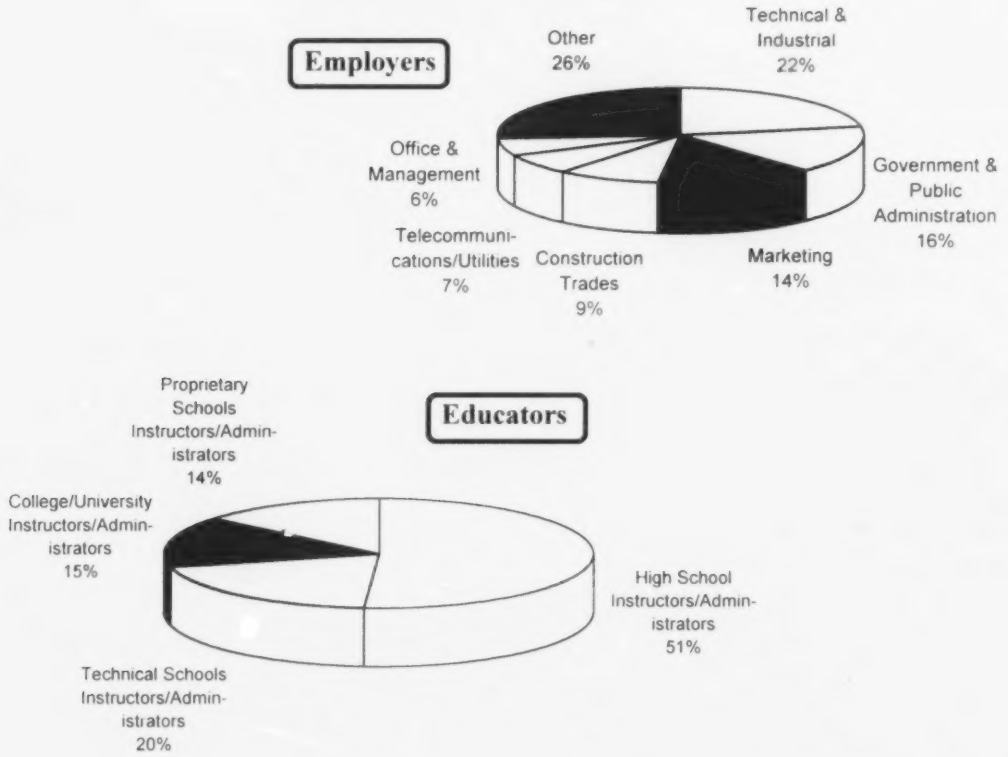
## WHO ANSWERED THE SURVEY



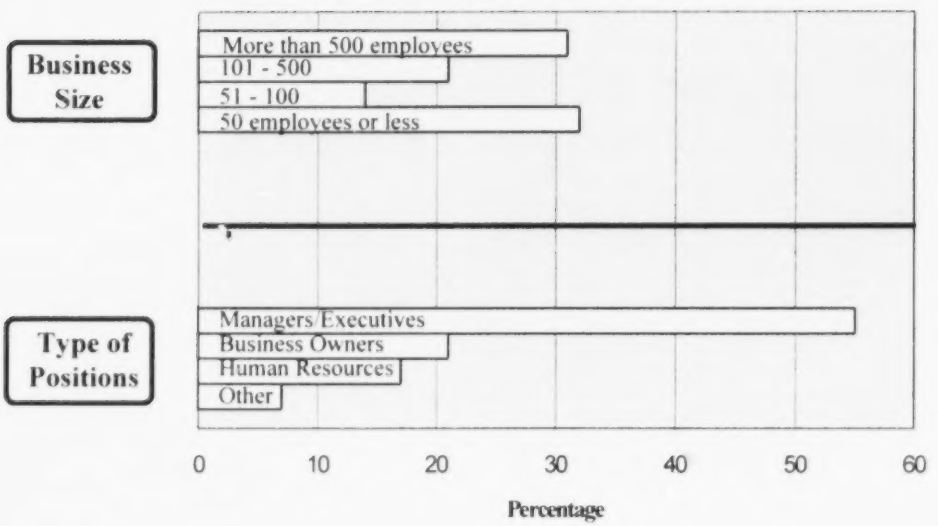
science, social studies, and language arts, when taken together, accounted for only 7% of the education respondents.

**Type of employment.** Slightly over one-half of the 457 employers who responded to the survey indicated they are managers or executives. Owners of businesses and those employed in human resources positions are also highly represented. Nearly two-thirds of the business respondents are employed by large-to medium-sized firms--that is, companies that employ more than 50 people. Of the 646 educators responding to the survey, half reported being employed at the high school level. However, overall, four times as many high school instructors responded as did high school administrators or supervisors. At the postsecondary level, only twice as many instructors as administrators returned surveys. Postsecondary respondents reported being employed in technical institutes, colleges and universities, and proprietary schools.

## TYPE OF EMPLOYMENT



## EMPLOYER PROFILE




## A Caveat

Although the Georgia State Assessment Project sent surveys to a statistically representative sample of Georgia employers and educators, it should be noted that the overall group of people who responded are not necessarily representative of the state *in all aspects*. For instance, according to the 1990 U.S. Census, Georgia's total population is 29% minority, including 27% Black, 1% Asian, and 1% other (including Native American). However, the respondents (by self-report) were comprised of 89% White, 7% Black, and 4% other (including Asian, Native American, and Hispanic).

## ARE THE DSOs IMPORTANT TO SUCCESS IN BUSINESS?

On the whole, both employers and educators rated all DSOs to be of "moderate" to "great" importance in obtaining and in advancing in employment. Both groups also indicated that although some of the DSOs might be of moderate importance in *obtaining* employment, those same DSOs might be of great importance in *advancing* in employment.

In all cases, educators consistently rated DSOs at the same level of importance or of slightly higher importance than did the employers.

> ***As a matter of fact, when the response patterns for the two groups were examined side by side, they were found to be almost identical. This finding seems to contradict the general public perception that educators are out of touch with the expectations and needs of business.***

*...both groups rated all DSOs to be of moderate to great importance in obtaining and advancing in employment*

### Importance of the DSOs in Obtaining Employment

**Obtaining Employment: DSOs Rated Highest**

Both employers and educators rated certain employability skills higher than any other survey items. Specifically, the DSOs of personal hygiene and appearance, punctuality, dependability, a positive attitude, successful on-the-job task completion, and respect for authority were deemed most important in obtaining employment.

Several of the written comments supported these overall ratings. Both business and education respondents conveyed a sense of frustration with the difficulty of being able to find applicants/employees with both technical skills and employability skills. It seems that in many cases, if made to choose, employers would select an applicant/employee with strong employability skills. One manager of a large business in an urban area of middle

Georgia summed up the thoughts of many business and education respondents:

> *"The basic skills which appear in this survey [should] weigh much [more heavily] than the technical skills as it relates to my business [construction]. I can locate applicants who possess the mathematical, computer, and technological skills with minimal effort. It is not a simple process, however, to locate applicants with a satisfactory personal standards ethic. It seems that in this technically oriented world that we live and work in, we have become too busy to teach our children the bare bone basics. The basics [to which I refer] used to be taught at home, but have faded away in recent years. Attendance, commitment to your employer, commitment to family, and pride in workmanship, as well as a desire to improve one's self, need to be at the top of all of our objectives in order to protect future growth."*

*...one manager of a large business stated that the basics (that is, values) used to be taught at home, but have faded away in recent years*

One technical institute instructor from north Georgia who agreed that "these are valuable attitudes and behaviors for graduates/ applicants to have" also commented that employability skills should be broadened to include another outcome:

> *"Applicants who display the [work-related] values [listed in the survey] should also know how to question authority when bosses say to let poor goods or services pass inspection, how to discern sexual harassment and what to do about it, how to discern discrimination and what to do about it, and how to see the impact of their work on humanity and on the environment."*

Both groups rated only a few other DSOs as highly as the six employability skills listed on the next page: (1) positive self-concept; (2) computation skills, (the ability to add, subtract, multiply and divide whole numbers, fractions, decimals and percentages), (3) the ability to send and receive clear verbal and nonverbal messages, and (4) the ability to read and comprehend written materials appropriate to the occupational discipline and program level.

These high ratings for employability skills, positive self-concept, and "basic" communication and computation skills are strongly

reflected in the comments of an employer from suburban north Georgia:

> *"The chief attributes I look for in candidates are: a willingness to work; the ability to follow directions and follow work to completion; pride in self and in work; the ability to work as a team member; the ability to get along; a positive upbeat attitude; good communications skills; the ability to listen; initiative with co-workers; and a 'self-starter' attitude."*

The importance of "basic skills" was mentioned by many of the respondents--although they did not necessarily define what they

## DSOs RATED HIGHEST IN OBTAINING EMPLOYMENT

(in order of importance)

- **Personal hygiene & appearance**
- **Punctuality**
- **Dependability**
- **Positive attitude**
- **Successful task completion**
- **Respect for authority**
- **Positive self-concept**
- **Computation skills**
- **Ability to send & receive verbal & non-verbal messages**
- **Ability to read & comprehend written materials**

meant by "basic." The following comments provide a good cross-section of the thoughts expressed on this subject. Comments ranged from the terse comment of a business owner in rural north Georgia:

> *"Most applicants are poorly prepared in basics."*

to the comments of a manager of grocery retail sales in suburban north Georgia:

> *"We employ high school and college students, as well as graduates of all levels of education up to the Master's degree. Most students are deficient in basic skills (math and spelling are particularly bad)."*

to the comments of the owner of a small magazine publishing company in metropolitan Atlanta:

> *"It is common for us to find high school graduates, and even college graduates (some with journalism degrees!) who cannot spell, who do not know the parts of speech, who cannot punctuate properly, who cannot write simple declarative sentences, who cannot combine a series of related thoughts into a logical sequence to create a compelling argument, who cannot calculate simple percentages, who cannot interpret statistics, who cannot understand charts and graphs, who do not understand the workings of the free enterprise system, who do not understand the behaviors that make one successful in business."*

Educators made observations that were similar to those of the employers. One vocational high school instructor in an urban area of south Georgia commented that:

> *"...the students we enroll in our programs are not as well prepared as students we enrolled several years ago. They don't have the academic skills they need to become successful completers of our programs. This is not to put the blame on academic teachers. They are also trying to do a good job. Students fail to realize the importance of education*

***...one employer looks for a willingness to work; the ability to follow directions; pride in self and in work; and the ability to work as a team member***

*and display this regularly with absenteeism, apathy, and attitude. Until we can change these things, we will never be able to train the kind of people business and industry want."*

A health-related services instructor at a technical institute in rural, south Georgia stated that:

*"Students desiring a career in the medical field who enter postsecondary technical education are weak in: written and verbal communication, reading comprehension, [and] basic algebra and basic math skills...."*

But perhaps the comment that comes the closest to addressing why the "basic skills" of computation and written and oral communication were rated to be of equal importance to employability skills for obtaining employment is expressed in the lament of the owner of a small transportation company in suburban north Georgia:

*"There is becoming a large portion of the workforce who lacks the basic skills necessary to obtain employment. It is very expensive for the employer to teach these skills. Therefore, our only option is to hire [people] with these skills. The people without the skills are left unemployed for the long term. Sometimes my company does without employees because there are not enough [people available] with the necessary skills. It may not be the lack of jobs, but the lack of people with the necessary skills."*

**Obtaining Employment: DSOs Rated Lowest**

Although all survey items for obtaining employment were rated to be of at least "moderate" importance, there were two items that were rated lower than any of the others by both employers and educators. On the average, survey respondents felt that (1) understanding the impact of international competition and the global economy on business and (2) the ability to apply higher level math skills such as algebra, geometry, and basic statistics to real problems were not quite as important in obtaining employment as the other DSOs. Employers rated these two DSOs slightly lower than did educators.

***DSOs RATED LOWEST IN OBTAINING EMPLOYMENT***

- *Understanding the impact of international competition*
- *The ability to apply higher level math skills to real problems*

## Importance of the DSOs in Advancing in Employment

### Advancing in Employment: DSOs Rated Highest

Again, both employers and educators rated employability skills most highly of all of the DSOs. In fact, these survey items were rated even higher for advancing in employment than they were for obtaining employment. Both business and education groups rated dependability, a positive attitude, punctuality, and successful on-the-job task completion to be the most important DSOs for advancing in employment.

The only other DSOs rated as highly as the particular employability skills listed above by both groups were: initiative, "learning to learn" skills, the ability to send and receive clear verbal and nonverbal messages, and the ability to read and comprehend written materials appropriate to the occupational discipline and program level.

Many of the written comments make it clear that having good math, communications, and technical skills are not enough to ensure advancement in the workplace. One businessman in a large company in metropolitan Atlanta spoke directly to these other highly valued outcomes/attributes:

> *"The main thing we look for is a self-starter and a person who can work with other people and communicate well. It is always good to have a person who can be innovative and come up with ways to do the job better. We look for the people who do not have to be asked to get the job done. We are a personal service company (engineering) and it's people's time that we sell. [so] it's important that our people communicate and work well with [our] clients."*

The survey ratings seem to reflect a new emphasis on personal development skills, such as "learning to learn," initiative, and teamwork -- in addition to a higher level of "basic" (academic) skills. Given several of the written comments, it appears that even in jobs which have traditionally accepted employees without high school diplomas, there is an increased emphasis not just on reading, math, and communications skills, but also on being a

*...the survey ratings seem to reflect a new emphasis on personal development skills, such as "learning to learn," "initiative," and teamwork*

lifelong learner and a "self-starter." This shift seems to be particularly pronounced in the field of technical and industrial services. Take note of the statements of a businessman in a large technical and industrial services company in rural north Georgia and those comments immediately following:

> *"...In the past (1960s), we in industry did not require/want highly trained people who were already equipped with working skills. Today, the ball game has changed and we are less able to compete in the world economy with the current education level of our employees."*

The comments of a businessman from a large, technical and industrial services company located in an urban area in middle Georgia indicate how the "ball game" has changed:

> *"As a medium- and high-skill level employer of 600+ [employees], we have found post-high school vocational education very effective in our maintenance apprentice programs, computer training, and other specific skills. ... But manufacturing in the 1990s requires employees who not only can operate the machines, but employees who can learn a new machine skill about every five years, employees who can trouble-shoot from a manual, employees who can run the statistical process control (SPC), employees who can chart for just-in-time (JIT) compliance, or employees who can run process improvement teams. These tasks require a higher level of high school math and writing skills than many vo-tech high school graduates [possess]. Courses in auto mechanics and body repair should not be a substitute for achievement in high school math and writing skills."*

Another businessman from a medium-sized technical and industrial services company in rural, south Georgia also reports changing qualifications for employees:

> *"We have had a difficult time in finding... qualified people. The problems don't center around technical skills as much as they do around the 'soft' skills such as work ethics, work relationships, etc. We*

***...one employer stated that manufacturing in the 1990's... requires a higher level of high school math and writing skills than many vo-tech high school graduates [possess]***

*operate in a non-traditional work environment where we need people to take responsibility and become mini-managers -- not machines that have to be given specific directions to accomplish a task. Every employee is a vital cog in the operation. When the basic skills are missing, how can we expect further in-depth skills such as problem-solving? We spend a lot of time in training employees. The days of being a robot are over and thinking/creative beings are of more value to themselves and the company. Your place of employment must be more than just a paycheck."*

## DSOs RATED HIGHEST IN ADVANCING IN EMPLOYMENT

(in order of importance)

- **Dependability**
- **Positive attitude**
- **Punctuality**
- **Successful task completion**
- **Initiative**
- **"Learning to learn"**
- **Ability to send & receive verbal & non-verbal messages**
- **Ability to read & comprehend written materials**

**Advancing in Employment: DSOs Rated Lowest**

Although all survey items for advancing in employment were rated to be of at least "moderate" importance, once again, the same two items were rated lower than any of the others by both employers and educators. On the average, survey respondents felt that (1) understanding the impact of international competition and the global economy on business and (2) the ability to apply higher level math skills such as algebra, geometry, and basic statistics to real problems were not quite as important for advancing in employment as the other DSOs. Again, employers rated these two DSOs even lower than did educators. However, some of the written comments indicate that at least a few employers and educators feel that this broader knowledge base is important. A human resources administrator in government/public administration in metropolitan Atlanta comments:

> *"It is rare to find an applicant in the general pool, who has a sense of the global community's impact on the USA's economy or life-style. Regrettably, few persons are trained or well-prepared to deal with [this or] workforce diversity."*

A high school instructor from rural, south Georgia agrees that:

> *"All too often the educator does not blend international vocational concepts and trends with current instruction. ... Educators [often have] tunnel vision instead of global vision."*

Even with the emphasis placed on the global economy by the mass media in recent years, the need for global understanding was rated low. And even though some respondents particularly specified in their written comments the need for employees to demonstrate some facility in the areas of statistics and algebra, the ability to apply higher level math skills received one of the lowest ratings from the survey respondents, overall.

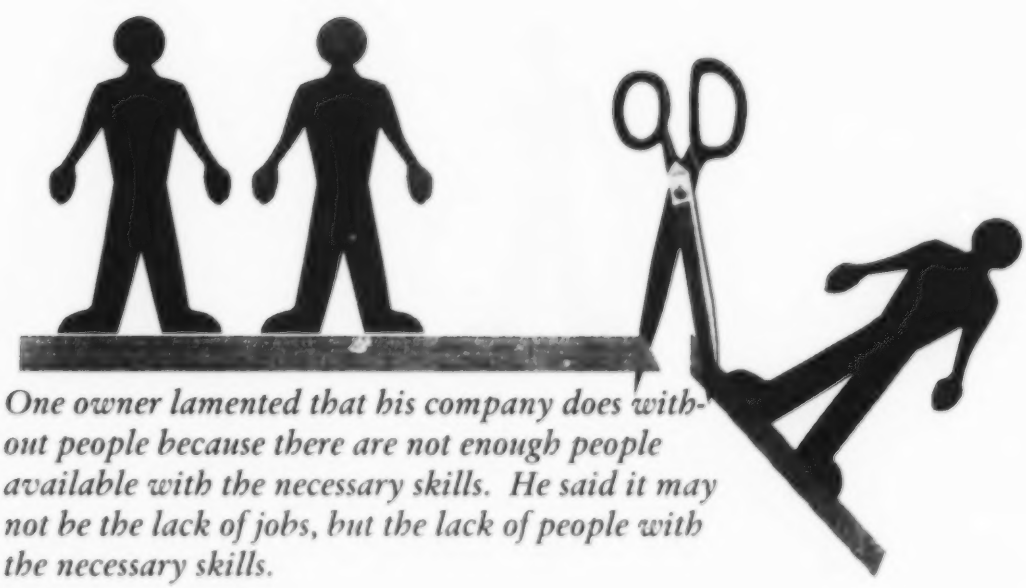
*DSOs RATED LOWEST IN ADVANCING IN EMPLOYMENT*

- *Understanding the impact of international competition*
- *The ability to apply higher level math skills to real problems*

## Discussion of Employers' DSO Ratings

Georgia employers rated the employability skills as the most important job requirement for being hired and promoted. Certain personal development skills and communication/information gathering skills were a close second in importance. Technical skills, such as specific occupational training, and academic skills, such as high level math skills and understanding the free enterprise system and the impact of international competition, were not rated as unimportant, but they appear to be secondary in importance to employability skills. This is just the opposite to the emphasis many schools place on teaching these sets of skills.

It must be remembered that employers do not make a distinction between employees who have graduated from vocational-technical education programs and those who have graduated from academic programs. They are simply looking for the best qualified person.



*One owner lamented that his company does without people because there are not enough people available with the necessary skills. He said it may not be the lack of jobs, but the lack of people with the necessary skills.*

## DSOs RATED MOST AND LEAST IMPORTANT BY GEORGIA EMPLOYERS

### OBTAINING EMPLOYMENT

***Most Important Skills***

- Employability Skills:
  - Punctuality
  - Dependability
  - Task completion
  - Positive attitude
  - Personal hygiene & appearance
  - Respect for authority
- Communication & Information Gathering:
  - Send & receive verbal & nonverbal messages
  - Read & comprehend written materials
- Personal Development Skills:
  - Positive self concept
- General Knowledge:
  - Computation skills (the ability to add, subtract, multiply, and divide whole numbers, fractions, decimals and percentages)

***Least Important Skills***

- General Knowledge:
  - Computation skills (the ability to apply higher level math skills such as algebra and basic statistics to real problems)
  - Understanding international competition

### ADVANCING IN EMPLOYMENT

***Most Important Skills***

- Employability Skills:
  - Punctuality
  - Dependability
  - Task completion
  - Positive attitude
- Communication & Information Gathering:
  - Send & receive verbal & nonverbal messages
  - Read & comprehend written materials
- Personal Development Skills:
  - Initiative
  - Learning to learn

***Least Important Skills***

- General Knowledge:
  - Computation skills (the ability to apply higher level math skills such as algebra and basic statistics to real problems)
  - Understanding international competition

# HOW WELL PREPARED ARE CURRENT APPLICANTS?

## Profile of a Desired Job Applicant

Based on a combination of the 28 DSOs and comments written by the respondents, the profile of a well-rounded job applicant emerges:

- He or she possesses skills typically associated with formal education, such as:
  - communication
  - reasoning
  - problem solving
  - critical thinking
  - mathematics
  - computer literacy
  - obtaining and using information
  - the ability to continue learning
- The well-rounded job applicant also:
  - has a sense of responsibility for his or her own career development
  - is proficient technically
  - is able to balance know-how needs with other organizational and interpersonal needs
- Such a person has
  - the willingness to take initiative and perform independently
  - the ability to cooperate and work in groups
  - competence in planning and evaluating his or her own work and the work of others
  - an understanding of how to work with persons from different backgrounds and cultures
  - the ability to make decisions
- High priority is placed on personal management skills, including:
  - self-control, honesty, and integrity
  - pride in one's work
  - respect for others

## Perceived Preparation Level of Current Applicants

On the whole, both employers and educators rated current job applicants as "satisfactory" on all of the DSOs but two. How respondents tended to arrive at the ratings can be ascertained by

looking at three written comments. A business respondent from rural, north Georgia wrote:

> *"[There] is a diversity of abilities within our workforce, specifically the salaried, management, and professional employees compared to the waged, operators, technicians, and clericals--I answered with this in mind."*

A metropolitan Atlanta high school administrator commented:

> *"The answers given in the 'preparation of current applicants' column were given with the average student in mind."*

And a high school instructor from an urban area within middle Georgia said:

> *"I also thought of employment as a very general, entry level concept, not specific career jobs."*

It was a weakness of the survey instrument that more specific parameters of what defines a "current job applicant" were not provided. (See Appendix C for the instructions which accompanied the survey.) For the most part, however, it seems from the comments that respondents did rate current job applicants with some average, entry level job and individual in mind.

Both employers and educators rated the preparation level of current job applicants at the higher end of the rating scale in (1) the more "basic" computation skills of adding, subtracting, multiplying and dividing whole numbers, fractions, decimals and percentages; and (2) in using equipment and tools safely and reading instruments and making measurements. In general, both groups also rated current job applicants as highly satisfactory in (3) successful on-the-job task completion and in (4) exhibiting a positive self-concept. Employers rated current job applicants as highly satisfactory in the employability skills of (5) personal hygiene and appearance, while the educators rated current job applicants as "excellent" in just this one DSO.

***...on the whole, both employers and educators rated current job applicants as "satisfactory" on all of the DSOs but two***

On the other hand, both employers and educators rated the preparation level of current job applicants as barely satisfactory in (1) applying higher level math skills (such as algebra, geometry, and basic statistics) to real problems; (2) in problem-solving skills; and (3) in creative thinking skills. Both groups also rated (4) understanding the impact of international competition and the global economy on business low--educators rated current job applicants as barely satisfactory in this DSO and business respondents rated current job applicants as "poor."

## SKILLS IN WHICH CURRENT JOB APPLICANTS ARE PERCEIVED AS MOST SATISFACTORY

(in order of ranking)

- **Computation skills**
- **Knowledge of proper use of equipment, tools, and material**
- **Positive self-concept**
- **Successful task completion**
- **Personal hygiene & appearance**

## DID GROUP AFFILIATION INFLUENCE THE RATINGS?

In addition to determining how survey respondents generally rated each DSO, GCOVE was also interested in knowing if, for example, women tended to rate particular DSOs differently than men or if respondents from one region of the State tended to rate some DSOs differently than respondents from another region. Thus, the survey data was also analyzed according to several different "groupings" using chi-square analysis. The biographical information that respondents provided along with their completed surveys was used to divide the survey responses into the following data sets for further analysis: region of the state, racial/ethnic background, and gender. When it was found that a particular group of respondents tended to rate the DSOs differently than their counterparts, probable explanations for the differences are offered, to the extent possible.

> ***It is important to remember when reading this section that it is possible for a DSO to be rated "moderate" or "great" in importance when the average of all of the ratings for that DSO is calculated and yet still have a number of people who rated it to be of "little" or "no" importance. Bear in mind that in this section of the report subsets of the data are discussed.***

### Region of the State

Survey respondents indicated that 681 (59%) are from the northern region of Georgia (I-20 northward and all metro Atlanta), 217 (19%) are from the middle region (between I-20 and US 280), and 258 (22%) are from the southern region (US 280 southward). For the most part, whether they were from north, middle, or south Georgia, respondents tended to rate the importance of each of the DSOs in a similar way. However, there were a few instances in which DSOs were rated differently in one region of the state than another.

**North Georgia**. The data indicates that there was only one DSO that north Georgians rated differently than middle or south Georgians. When it came to advancing in employment, a larger

*...for the most part, whether from north, middle, or south Georgia, respondents tended to rate the importance of each DSO in a similar way*

proportion of north Georgians rated the ability to express an understanding of the basic concepts of economics as being of "great" importance in advancing in employment than did their counterparts. Perhaps this has to do with the fact that several large, highly competitive industries that export broadly are located in north Georgia, such as the carpet and textile mills, and that a variety of large companies and international corporate headquarters are based in Atlanta.

**Middle Georgia**. When it came to obtaining employment, a larger proportion of middle Georgians rated the ability to demonstrate computer awareness and an understanding of the basic concepts of economics to be of "little" importance than did their counterparts. For advancing in employment, a larger proportion of middle Georgians rated the ability to apply higher level computation to be of "little" importance and the ability to demonstrate an understanding of the impact of international competition to be of "no" importance. These findings should be considered in light of the fact that the "high-tech" aerospace industry is growing rapidly in the middle part of the state. On the other hand, there were two survey items that a larger proportion of middle Georgians rated to be of "great" importance than did their counterparts in north and south Georgia: (1) the ability to interpret charts, graphs, and displays to obtain employment and (2) the ability to select appropriate materials and to maintain and care for equipment to advance in employment.

## SURVEY RESPONDENTS BY REGION

**South Georgia.** It is sometimes thought that south Georgia places less emphasis on global awareness and technology than other parts of the state because it is so largely rural. But in fact, a much larger proportion of south Georgians than north or middle Georgians rated the need to express (1) an understanding of the impact of international competition and the global economy on business and (2) an understanding of the concepts of technology as important for advancing in employment. (Of course, overall, there were enough respondents rating the "global understanding" DSO as of "little" or "no" importance that when all responses were averaged for this survey item, it was rated at the low end of the "moderate" importance category.) South Georgians also rated the ability to think creatively to be of "great" importance for obtaining employment more often than did their counterparts. Where job applicants are concerned, a greater proportion of respondents from south Georgia indicated that applicants had "little" preparation in specific occupational computer applications. Perhaps all of these responses reflect South Georgia's current active recruitment of businesses outside of Georgia.

## Racial/Ethnic Background

Survey respondents included 36 Native Americans, 5 Asians, 85 Blacks, 2 Hispanics, and 1,033 Whites. For the purpose of statistical analysis, two groups were designated: majority (Whites) and minority (all others), since the White group was so much larger than any of the other groups.

It was found that, with one exception, the minority group consistently rated the preparation level of current job applicants as being much better than did its counterpart. The only item that was rated similarly by all respondents was the preparation of current job applicants in the area of scientific and environmental concepts.

Most of the differences in rating occurred relative to the importance of the DSOs in obtaining employment. As a group, minority respondents rated the importance of job search skills, such as being able (1) to develop a career plan and (2) to plan for career growth by seeking further job skill training, to be of "greater" importance for obtaining employment than did the majority group. Perhaps, as suggested by some of the sociology literature, this has to do with the tendency of individuals within minority groups (and women in

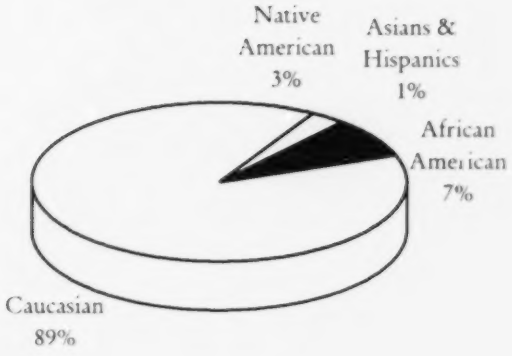
*...it was found that, with one exception, the minority group consistently rated the preparation level of current job applicants as being much better than did its counterpart*

the next section) to make job connections primarily through people they know well. This practice leads to a more limited range of job opportunities. Thus, it may be that this is part of the reason that job search skills were rated so highly by respondents in the minority group.

Minority respondents also rated the personal development skills of positive self-concept, "learning to learn," and problem-solving skills more highly than did the majority group. They rated the ability to interpret and prepare charts, graphs, and displays to be of greater importance, as well. And a much larger proportion of the minority group rated the DSOs of initiative, creative thinking skills, inter-personal relations skills, balancing commitments between home and work, and negotiation skills to be of "great" importance in obtaining employment than did their counterparts.

As a group, the minority respondents rated the ability to express an understanding of the impact of international competition and the global economy on business; the understanding of one's role in the organization; and the ability to demonstrate an understanding of the occupational procedures within an organizational context to be of greater importance in obtaining employment than

**RACIAL/ETHNIC BACKGROUND OF SURVEY RESPONDENTS**



did their counterparts. Perhaps the minority respondents (and women as discussed in the next section) rated these items higher because they are more conscious of working within hierarchical systems (both real and imagined). Increasing one's understanding of his or her job within the context of the overall organization and a broader economic picture would certainly be one way of determining how best to fit into a "majority" culture.

In the category of technical skills, the minority group rated the ability to (1) select appropriate materials and maintain or care for equipment and (2) a knowledge of the relevant federal and state laws and regulations for a specific occupation to be of greater importance than did the majority group.

When it came to advancing in employment, a slightly smaller proportion of the minority group than the majority group rated the ability to exhibit adaptability skills and the ability to demonstrate computation skills to be of "great" importance.

In the category of employability skills, a larger proportion of the minority group than the majority group rated knowing how to access sources of information about occupations to be of "great" importance in both obtaining and advancing in employment.

## Gender of Respondents

The majority of the women (327 of 448) responding to the survey identified themselves as educators. Consequently, only slightly more than one-fourth of the women responding to the survey were from the business community. Of the men, 319 of the 714 identified themselves as educators, so the number of men from the business community and men from the education community was more nearly equal.

On the average, the 448 women respondents consistently rated the DSOs at the same level of importance or of higher importance for obtaining and advancing in employment than did the 714 men. The women also rated the preparation level of current applicants at the same level or higher than did the men.

Although it is clear that both groups endorse all of the DSOs, further investigation reveals that men and women rated only a

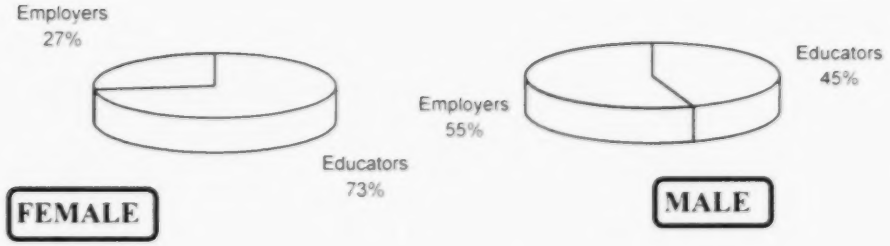
*...the majority of women responding to the survey identified themselves as educators*

handful of the 39 survey items similarly relative to obtaining and advancing in employment. There was much more similarity in the way survey items were rated, however, when the respondents rated the preparation level of current job applicants.

There are 11 DSOs that women rated uniformly higher for obtaining and advancing in employment than men: (1) computer awareness, (2) sending and receiving clear verbal and nonverbal messages, (3) written communication, (4) adaptability, and (5) negotiation skills. Also rated higher by women were the employability skills of (6) developing a career plan, (7) job application/resume preparation skills, (8) interviewing skills, and (9) respect for authority. The technical skills (10) of expressing an understanding of how to apply computer skills to a specific occupation (11) and a knowledge of the laws and regulations which apply to a specific occupation were also rated higher. Another finding was that the women respondents were more satisfied with the preparation level of current job applicants in these skills/attributes than were the men.

On the whole, men tended to rate the items in the general knowledge base category higher than did women for both obtaining and advancing in employment. The general knowledge base survey items included the broad areas of ( ) computation; (2) computer awareness; (3) scientific and environmental concepts; (4) understanding the basic concepts of economics, entrepreneurship, and global competition; and (5) concepts of technology.

## GENDER OF SURVEY RESPONDENTS



Conversely, women tended to rate the importance of the DSOs in the other four broad categories, (1) communication and information-gathering skills, (2) personal development skills, (3) employability skills, and (4) technical skills much more highly for obtaining and advancing in employment than did men with one exception. When it came to advancing in employment, women tended to rate the importance of higher math skills more highly than did men, while they were inclined to rate the importance of basic computation skills lower than their male counterparts.

However, men rated the importance of communication skills, such as the ability to send and receive clear verbal and nonverbal messages and the importance of written communication skills, more highly than did women for advancing in employment. Men also rated the personal development skills of taking pride in one's work, creative thinking, balancing commitments between home and work, and the employability skill of understanding one's role within the organization slightly higher than did the women.

Women tended to rate the preparation level of current job applicants as "satisfactory," while men tended to rate their preparation level as "poor" on a little over one-third of the survey items. These items included computer awareness, adaptability, learning to learn, and negotiation, all of the communication and information-gathering skills, the job search skills and planning for career growth by seeking further job skill training, and the technical skills of applying the appropriate computer skills to a specific occupation and having an awareness of the relevant laws and regulations for a specific occupation.

*...there seemed to be some differences in the way respondents rated the DSOs based on their group membership*

## Summary of DSO Ratings by Group Membership

There seemed to be some differences in the way respondents rated the DSOs based on their group membership. Except for the general knowledge base category, the women who responded to the survey tended to rate the importance of the DSOs for obtaining and advancing in employment more highly, overall, than did the men. In particular, the women seemed to value skills such as communication/information gathering, computer awareness, career planning, and certain personal development skills more highly. In the main, the women seemed to put more emphasis on the DSOs for obtaining employment.

Respondents from the minority group also put high value on career planning and personal development skills-- but most particularly

for obtaining employment. As a matter of fact, most of the skills that were rated highest by the minority group had to do with accessing information, in a broad sense. This ranged from gathering information for a job search to "learning to learn," and from developing negotiation skills to understanding one's role in the organization.

Both women and minorities tended to rate the preparation level of current job applicants more highly than did their counterparts. It would be interesting to investigate the reasons behind this finding.

The geographic location of respondents within the State seemed to make much less difference in the way respondents rated the DSOs than if they were a man or a woman, or if they were part of a minority or majority grouping for race/ethnicity.

## THE DIFFERENCES IN RESPONSES BY GROUP MEMBERSHIP

- **REGION**
  - north Georgians rated the ability to express an understanding of the basic concepts of economics higher than middle or south Georgians
  - middle Georgians valued the ability to communicate through visual displays higher than did north or south Georgians
  - south Georgians:
    - placed higher value on understanding the impact of international competition & the global economy on business than did north & south Georgians
    - also valued the ability to understand the concepts that underlie technological systems
    - rated the ability to apply computer knowledge to specific occupation more highly than their counterparts
    - rated the ability to think creatively higher than their counterparts
- **RACE/ETHNICITY**
  - also places a high value on career planning and personal development skills
  - rated skills for accessing information the highest
- **GENDER**
  - rated the importance of DSOs in obtaining and advancing in employment more highly than did men
  - valued skills such as communication/information gathering, computer awareness, career planning, and certain personal development skills more highly

## EMPLOYMENT SKILLS FOR THE 21ST CENTURY

Everywhere we turn, it seems that there is another report, news article, or editorial telling us that traditional jobs are changing, that high paying but unskilled jobs are disappearing. We hear that technology and people must be combined in new ways, decisions must draw on the abilities of employees to think creatively and solve problems, and that employees must be comfortable with technology and complex systems, "learning to learn," and working as the member of a team.

However, until recently with the (U.S. Department of Labor) *Secretary's Commission on Achieving Necessary Skill (SCANS)* report and similar reports at the national level, employers have never clearly told educators what students need to know and be able to do in order to succeed. In Georgia, GCOVE and the State education and training agencies have attempted to define the outcomes that our students need to possess to be successful in Georgia's workforce. We went on to develop a survey, based on this work, to solicit input from both the business and education communities at a grassroots level, because we understand how important it is to include everyone's voice in such important matters.

As much as educators and policymakers recognize the importance of transforming our public schools into high-performance organizations in their own right and our graduates into life long learners, that will not be enough to ensure high-performance, competitive businesses. Employers also must be committed to excellence, product quality, and customer satisfaction. The *SCANS* report of 1990 states that "...nine out of ten employers are operating on yesterday's workplace assumptions." It becomes more important every day for employers to (1) let our public schools know what is expected of our students in the workplace, (2) make it clear to applicants when they are hired that learning and earning are related activities, and (3) invest in employees so that they can obtain the skills needed to succeed in this new environment.

Some Georgia employers are already doing these things. However, based on a review of the optional comments written by business respondents, it is evident that not all Georgia employers are aware of the massive changes that are already taking place in the marketplace. For every two or three written comments that

*...the SCANS report of 1990 states that "...nine out of ten employers are operating on yesterday's workplace assumptions"*

indicated the need for employees with an awareness of global issues and higher computation, computer, and problem solving skills, there was a written comment that indicated that employees need only possess skill in the "basics" and demonstrate employ-ability skills. Nonetheless, one has only to look at the collapsing job titles and down-sizing of businesses in Georgia and the nation to see the need for a versatile employee with higher order thinking skills and an ability to act as both a leader and a follower and all that implies.

Although, as reported earlier, both the Georgia Assessment Project consultants and GCOVE staff worked to obtain a representative sample of Georgia employers, responses from the business community were limited (457 respondents). However, the employers who did respond were disbursed proportionately across the State and do represent a broader base of employers who hold similar views. For that reason, it is useful to discuss in more depth how business respondents rated particular DSOs on the continuum of "no" importance to "great" importance.

*...everything points to the need to impart skills beyond basic computation to our students*

## Examining Selected DSO Ratings

As mentioned throughout this report, *overall*, Georgia employers rated all of the desired student outcomes to be of moderate to great importance. Even so, it is useful to have information about the full range of employer DSO ratings. Consequently, the data was examined to determine the proportion of business respondents who rated particular DSOs to be of little or no importance.

**Computation, computers, and the economy.** Everything points to the need to impart skills beyond basic computation to our students. We continually hear that students, at a minimum, must have an understanding of basic algebra and statistics. Although the ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages was rated overwhelmingly important--70% rated this competency to be of great importance for *obtaining* employment and 80% rated it to be of great importance for *advancing* in employment, this was not true for the higher levels of math. The ability to apply higher level math skills (such as algebra, geometry, and basic statistics) to real problems was judged to be of no importance for *obtaining* employ-

ment by 17% of the business respondents and of no importance for *advancing* in employment by 12%.

Many businesses use personal computers in their operations these days. No matter how small the business, no industry seems to be blind to the benefits of using computers. Beauty salons and junk yards in Georgia are as likely to use computers to store information as are engineering firms and universities. However, 24% of the business respondents felt that computer awareness--the knowledge of fundamental uses and functions of the computer and exposure to general types of software--was of little or no importance for *obtaining* employment and 12% felt that it was of little or no importance for *advancing* in employment.

*...no matter how small the business, no industry seems to be blind to the benefits of using computers*

Related to the ability to use basic software packages is the ability to prepare and interpret numeric and graphic symbols in the form of charts, graphs, and displays. Thirty-eight percent (38%) of the business respondents felt that this was of little or no importance for obtaining employment and 19% felt it was of little or no importance for *advancing* in employment for the average employee.

As we begin to compete with the workers in other countries to produce goods and bring them to market, it would seem advantageous for our workers to have a basic understanding of the concepts of economics, entrepreneurship, and marketing and the impact of international competition and the global economy on business--at least in terms of *advancing* in employment. However, up to 24% of the business respondents felt that this knowledge was not important for advancement.

**Personal development skills**. Most of the business respondents felt that the skills/attributes of positive self-concept, adaptability, "learning to learn," initiative, problem solving, creative thinking, interpersonal relations skills, negotiation skills, and the ability to balance work and personal commitments were of great importance for *advancing* in employment. When it came to *obtaining* employment, however, 14% of the respondents felt that problem solving skills were of little importance in securing employment and 24% felt that creative thinking skills were of little importance in starting out. And 13% to 16% of the respondents also felt that skills in balancing commitments, interpersonal relations skills, and negotiations skills were of little importance in *obtaining* employment.

**Technical skills.** Although all of the DSOs related to technical skills were rated from moderate to great in importance for *advancing* in employment, up to 20% of the business respondents indicated that knowing the proper use and care of equipment, instruments, tools, and materials were of little or no importance in *obtaining* employment. However, several business respondents indicated in the written comments that their employees were strong in this area. Perhaps this DSO was rated low because employers routinely train their people in this area or perhaps the rating reflects a feeling that employees are already well-prepared in this regard.

## Next Steps

It appears from some of the overall survey ratings and written comments that an education campaign to the general public about changes that are underway in the Georgia workplace is in order. The Georgia Council on Vocational Education (GCOVE) will continue to disseminate the desired student outcomes and the results of the validation survey broadly--through publications and public speaking engagements.

GCOVE is encouraging schools and school systems which have chosen to adopt the *Vision* model to incorporate the DSOs into their curricula and graduation performance outcomes. This conceptional model was developed from grassroots input in GCOVE's "Creating the Vision for Education in the 21st Century" project. In early 1990, the State Board of Education, the State Board of Technical and Adult Education, the Board of Regents of the University System of Georgia, and the Governor's Employment and Training Council signed an Agreement of Support for the desired student outcomes and the related concepts and commitments included in the document, *Agenda '95* (which was published in 1990). The Department of Education and the Department of Technical and Adult Education report that they have already begun to incorporate the DSOs into their curricula and curriculum guides.

## Some Final Thoughts

A strong, healthy economy and happy, productive citizens are some of the potential by-products of an on-going, mutually beneficial partnership between the business and education communities. The need for workers with world class skills requires world class schools that are continuously improving the learning experiences they provide. The newly acquired knowledge and skills will not be put to optimum use, however, unless business makes it clear that workers are expected and empowered to take responsibility for constructive change and continuous improvement in their work. There is a real need for sustained, collaborative efforts among business, education, and government to redefine roles, objectives, and strategies to move forward together. This project to mutually define desired student outcomes for students within the vocational-technical delivery system at the State and grassroots levels is only a beginning. The real work must be done in each community and school--for it is there that the DSOs must be translated into specifics and implemented. There is much to do--let us begin.

# APPENDICES

## AGENDA '95 COMMITTEE
## 1991-1992

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Georgia Department of Education

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Ms. Andrea Harper
Governor's Employment and
Training Council

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## DESIRED SYSTEM CHARACTERISTICS*

To achieve the desired student outcomes (DSOs), the focus of the total vocational-technical education delivery system in Georgia must be student-centered. Each of the five characteristics discussed below represent a feature of such a system.

***First***, there is a need for a system-wide attitude of "lifelong learning." In order to support lifelong learning, the vocational-technical education delivery system will need to be supportive of both traditional and non-traditional students. Non-traditional students, in particular, will have unique circumstances that will need to be dealt with in an open and creative environment.

***Second***, a student in Georgia should be able to enter the vocational-technical education system and exit with an education that will enable entrance into either postsecondary education and training or entry-level work, fully prepared to participate without remediation of any kind.

***Third***, every student in Georgia, both secondary and postsecondary, has the right to expect and receive the most up-to-date education from high quality teachers and instructors who are prepared to meet the needs of students and train them for the year 2000. Likewise, facilities, equipment, materials and curriculum used for education and training should be state-of-the-art so that students will be properly prepared to enter the workforce.

***Fourth***, varied learning styles of students should be taken into consideration in the delivery of vocational-technical education. Students with unique needs required for learning should be viewed individually.

***Fifth***, alternate settings for learning which use a variety of experiences should be explored including on-site work experience, apprenticeships, and cooperative work programs as well as instruction through telecommunications and home television.

*Reproduced from *Agenda '95*, page 21.

## ACTION COMMITMENTS*

There is an increasing awareness of the need for all four [training and education] agencies involved to work together cooperatively to enhance the total vocational-technical education delivery system so that it results in the desired student outcomes. There is a recognition that some changes must be made and that some existing commitments must be continued. Each agency has somewhat different missions, a different governance structure and different resources available; therefore, how each agency will address the implementation of the desired student outcomes and desired system characteristics will vary as appropriate. Nevertheless, each agency endorsed the desired student outcomes and is committed to the following implementation concepts:

1. The desired student outcomes will be disseminated to administrators, instructors, and others involved in developing the program content of vocational-technical education programs and the incorporation of the desired student outcomes into programs will be encouraged.

2. Strategies for encouraging implementation of the desired student outcomes will be identified by each agency.

3. Curriculum guides revised or developed and recommended by the Department of Education for secondary vocational education programs will be designed to produce the desired student outcomes identified in this report.

4. Program standards and program guides for the Department of Technical and Adult Education will be reviewed and revised as necessary to incorporate desired student outcomes which are not already included.

5. Assessment for the desired student outcomes will be developed by each agency with outside agency confirmation, with the exception of Regents, where such assessment will be encouraged at the institutional level. (For example, the warranty program of the Department of Technical and Adult Education may serve as part of the assessment for the agency.) Such assessment will be coordinated with the other agencies in order to minimize time and cost of such measurement.

6. Mechanisms to recognize desired student outcomes already achieved at prior levels of education and training by a student will be identified by each agency, with the exception of Regents, where such mechanism will be encouraged at the institutional level.

7. A joint, cooperative effort among agencies will be undertaken to coordinate the delivery of the desired student outcomes referred to in items one and two above.

8. The desired student outcomes will periodically (at least every five years) be validated and updated through a statewide survey of Georgia employers and educators which is coordinated by the Georgia Council on Vocational Education.

9. All agencies will pursue proper and adequate funding to achieve the goals of *Agenda '95*.

*Reproduced from *Agenda '95*, page 21.

| Student Outcomes /Attributes of Future Employees | Importance for obtaining employment | | | | Importance for advancing in employment | | | | Preparation level of current applicants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | Little | Moderate | Great | No | Little | Moderate | Great | No | Poor | Adequate | Superior |
| *Computation Skills:*<br>1a. The ability to add, subtract, multiply and divide whole numbers, fractions, decimals and percentages. | | | | | | | | | | | | |
| 1b. The ability to use proportions, roots, powers, algebra, geometry, trigonometry and basic statistics, as applied to real problems. | | | | | | | | | | | | |
| *Computer Awareness:*<br>2. The knowledge of fundamental uses and functions of the computer and exposure to general types of software. | | | | | | | | | | | | |
| *Scientific and Environmental Concepts:*<br>3. The ability to distinguish between scientific evidence and personal opinion. Levels of knowledge should enable the student to understand the theory and practice of scientific inquiry, societal values, and environmental concepts or issues related to a specific occupation. | | | | | | | | | | | | |
| *Understanding of Entrepreneurship and the Free Enterprise System and International Competition:*<br>4a. The ability to express an understanding of the basic concepts of economics, entrepreneurship, marketing and the fundamental tenets of a free enterprise system. | | | | | | | | | | | | |
| 4b. The ability to express an understanding of the impact of international competition and the global economy on business. | | | | | | | | | | | | |
| *Concepts of Technology:*<br>5 The ability to express an understanding of the concepts that underlie technological systems and their influence on the lives of individuals in the work setting and at home. | | | | | | | | | | | | |
| *Communication Skills:*<br>6. The ability to send and receive clear verbal and nonverbal messages, including the appropriate use of vocabulary and language skills in verbal expression. | | | | | | | | | | | | |
| *Written Communication:*<br>7. The ability to organize thoughts and express oneself clearly in writing, using grammar and vocabulary in a manner appropriate for a given audience or purpose. | | | | | | | | | | | | |
| *Reading Comprehension:*<br>8. The ability to read and comprehend written materials appropriate to the occupational discipline and program level. | | | | | | | | | | | | |
| *Communication with Charts, Graphs, and Displays:*<br>9. The ability to interpret and prepare numeric and graphic symbols for transmitting information consistent with job responsibilities. | | | | | | | | | | | | |

| Student Outcomes /Attributes of Future Employees | Importance for obtaining employment | | | | Importance for advancing in employment | | | | Preparation level of current applicants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | Little | Moderate | Great | No | Little | Moderate | Great | No | Poor | Satisfactory | Excellent |
| *Positive Self-Concept:*<br>10. The ability to exhibit pride in one's self, work and achievements and a belief in one's potential. | | | | | | | | | | | | |
| *Adaptability Skills:*<br>11. The ability to adapt and to accommodate on-going change, consistent with job responsibilities and life changes. | | | | | | | | | | | | |
| *"Learning to Learn" Skills:*<br>12. The knowledge and skills needed to learn effectively and to continue learning throughout life. | | | | | | | | | | | | |
| *Initiative:*<br>13. The ability to begin a plan or task and to follow through to completion with little or no supervision. | | | | | | | | | | | | |
| *Problem-solving Skills:*<br>14. The ability to identify and systematically analyze problems and propose realistic solutions. Problem solving skills include critical thinking skills such as inductive and deductive reasoning to arrive at conclusions. | | | | | | | | | | | | |
| *Creative Thinking Skills:*<br>15. The ability to conceptualize and present new, novel and innovative ideas. | | | | | | | | | | | | |
| *Interpersonal Relations Skills:*<br>16. The ability to accommodate the diversity of others in relation to the performance of school activities and assignments or to one's job. | | | | | | | | | | | | |
| *Skills in Balancing Commitments:*<br>17. The ability to prioritize and integrate appropriately day-to-day and long-term personal and work commitments. | | | | | | | | | | | | |
| *Negotiation Skills:*<br>18. The ability to reach agreement with others through discussion, suggestions, compromise and consensus-building. | | | | | | | | | | | | |
| *Career and Education Planning Skills:*<br>19a. The knowledge of sources of information about occupations. | | | | | | | | | | | | |
| 19b. The ability to develop a career plan, determine desired employment positions, and facilitate job progression. | | | | | | | | | | | | |
| *Job Application/Resume Preparation Skills:*<br>20. The ability to communicate job skills effectively through job applications and resumes. | | | | | | | | | | | | |

| Student Outcomes /Attributes of Future Employees | Importance for obtaining employment | | | | Importance for advancing in employment | | | | Preparation level of current applicants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | Little | Moderate | Great | No | Little | Moderate | Great | No | Poor | Satisfactory | Excellent |
| ***Interviewing Skills:*** | | | | | | | | | | | | |
| 21a. An understanding of the purpose and the process of an interview in order to project a positive image of one's knowledge and ability to perform in a given job. | | | | | | | | | | | | |
| 21b. An understanding of the purpose and the process of an interview in order to obtain information regarding the job requirements sufficient to make a job selection decision. | | | | | | | | | | | | |
| ***Work Related Values:*** The ability to demonstrate consistently the following behaviors: | | | | | | | | | | | | |
| 22a. Dependability which includes reliability in work performance and attendance requirement. | | | | | | | | | | | | |
| 22b. Punctuality including timely arrival and departure consistent with the job requirement. | | | | | | | | | | | | |
| 22c. Respect for the organizational role of individuals in positions of authority. | | | | | | | | | | | | |
| 22d. Positive attitude which is exhibited by a sense of pride in work, commitment to quality and excellence and willing and cooperative behavior. | | | | | | | | | | | | |
| 22e Personal hygiene and appearance that is appropriate for the job requirements. | | | | | | | | | | | | |
| 22f. Successful on-the-job task completion of the work or the product required for the job by the set deadline. | | | | | | | | | | | | |
| 22g. Planning for career growth and development by showing a willingness to seek further job skill training. | | | | | | | | | | | | |
| ***Understanding of Role within the Organization:*** 23. The ability to express an understanding of how one's position contributes to the achievement of the overall objectives and goals of the organization and an understanding of the employer's expectations. | | | | | | | | | | | | |
| ***Awareness of Computer Applications in a Specific Occupation:*** 24. The ability to express an understanding of basic computer applications related to a specific occupation and program level. For example, use of programmable logic controllers for electrical and electromechanical programs; wordprocessing, spreadsheets and database management systems for business education programs; environmental control units for heating and air conditioning programs; computerized engine analyzers and controls for automotive repair programs, and computer-aided drafting (CAD) for drafting programs. | | | | | | | | | | | | |

| Student Outcomes /Attributes of Future Employees | Importance for obtaining employment | | | | Importance for advancing in employment | | | | Preparation level of current applicants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | Little | Moderate | Great | No | Little | Moderate | Great | No | Poor | Adequate | Superior |
| ***Knowledge of Proper Use and Care of Equipment, Instruments, Tools and Materials:***<br>25a. The ability to use equipment and tools properly and safely and to read instruments and make measurements. | | | | | | | | | | | | |
| 25b. The ability to select appropriate materials and the ability to maintain or care for the equipment (such as routine oiling, replacement of parts, etc.). | | | | | | | | | | | | |
| ***Knowledge of Relevant Federal and State Laws and Regulations of a Specific Occupation:***<br>26. An awareness of licenses or certificates, which should be obtained, health and safety regulations, special equipment, and supervision required for certain tasks. For example, a knowledge of the storage and disposal of hazardous waste in various occupations, such as syringes in a health occupation and used oil in an automotive shop. | | | | | | | | | | | | |
| ***Specific Technical Skills of the Occupation:***<br>27. The ability to perform skills and competencies appropriate to the occupation. For example, a specific technical skill for the occupation of automotive technician would be the ability to use an engine analyzer to diagnose engine problems. | | | | | | | | | | | | |
| ***Process Skills - Organizational Context:***<br>28. An understanding of occupational procedures (in relation to both equipment and work flow) and of how these procedures contribute to the achievement of overall organizational goals. | | | | | | | | | | | | |

Part III: Comments (use additional sheets as needed)

# AGENDA '95
# DESIRED STUDENT OUTCOMES SURVEY

### WHAT IS IT?

- The State Board of Education, the State Board of Technical and Adult Education, the Board of Regents of the University System of Georgia, and the Governor's Council on Employment and Training, with the Georgia Council on Vocational Education's coordination, developed a set of 28 desired educational outcomes for Georgia students. These four agencies agreed that the core of 28 generic skills (which you will rate on the enclosed survey) should be applicable to ALL vocational-technical students, regardless of the area of occupational training or whether the training occurred at the high school level or at an educational institution after high school graduation.

### WHY SHOULD I RESPOND?

- As a Georgia business person or educator, your input is critical for determining what the educational outcomes should be for students exiting from vocational-technical programs into the workforce.

### HOW LONG WILL IT TAKE?

- The survey should take approximately 30 minutes to complete.

### WHY ME?

- You have been specifically selected as a representative of a certain segment within either the education community or business community. Because we need your unique perspective, please do not ask someone else to complete this survey form for you.

### WHAT IF I NEED HELP?

- Detailed instructions are provided below. If you are missing any portion of this survey or need further clarification to complete the background information or a section of the survey, please call the Georgia Assessment Project Survey Department at 1(800) 822-8515.

### ARE MY ANSWERS CONFIDENTIAL?

- Yes, your responses will remain confidential. Your name appears on the outside of the envelope for distribution purposes only. The code on your survey will be used to compile responses into specific categories based on your background. No individual's responses will be reported or singled out for any reason.

### WHEN IS IT DUE?

- In the envelope provided, return all materials to Georgia Assessment Project no later than April 24, 1992.

## INSTRUCTIONS

Refer to the information below if you need further clarification to complete the background information section or a section of the survey.

### PART I: BACKGROUND INFORMATION

Part I contains questions related to your education and work experience. It serves to provide background information which will be used in analyzing responses to the actual survey. The first portion of the background information is divided into a section for educators and a section for members of the business community. The remainder of Part I should be completed by all respondents.

### PART II: SURVEY FORM

Part II is the section of the survey form which contains the student outcome statements you are being asked to rate.

**Ratings**

Please rate each student outcome statement by putting a check mark in the appropriate response column under each of the three survey categories. An explanation of each of the three categories is given below.

Category 1: Importance for Obtaining Employment

**How important is this student outcome for obtaining employment?**

Does a student need to be able to exhibit this skill to obtain employment upon exiting a vocational-technical education program? Answer this question from the perspective of which skill(s) would be necessary to obtain an entry-level position in the field for which you train students or for which you employ students. If you are an employer, answer in light of the majority of the type of workers you employ.

Category 2: Importance for Advancing in Employment

**How important is this student outcome for advancing in employment?**

It is assumed that to advance within a career, it is necessary to obtain further training. That training might be provided on-the-job by the employer or it might be formal education or training provided by an educational institution.

Category 3: Preparation Level

**What is the preparation level of current applicants for this student outcome?**

If you are an *employer*, answer this question in terms of how well you think current job applicants are prepared relative to the student outcomes.

If you are an *educator*, answer the question in terms of students who have just exited your vocational-technical programs. How well prepared do you feel they are to serve in the current workforce, in terms of the student outcomes listed on the survey?

## PART III: COMMENTS

Strict confidentiality of individual written responses will be maintained, as is true for the individual survey responses. Attach additional sheets, if necessary. If it is appropriate, key your comments to particular student outcome statement numbers. Although it is not required, it would be especially helpful if you commented on the following:

- Clarity. Were any of the student outcome statements unclear? If so, which ones?
- Add outcome. Did you feel that any student outcome statement(s) should be added? If so, what are they? Why are they important?
- Partially agree. Did you agree with only part of a student outcome statement? If so, please refer to the statement number and comment as to which part you agreed or disagreed with and why.
- No importance/no preparation. Did you answer "No" in any of the three survey categories? If so, please comment as to why and refer to each such student outcome statement by number.
- Delete outcome. Should any of the student outcome statements be deleted because they are not appropriate skills for ALL vocation-technical students to possess? Or should particular statements be deleted for some other reason(s)? If so, please state the reason(s).

# BIOGRAPHICAL QUESTIONNAIRE
# AGENDA '95
# DESIRED STUDENT OUTCOMES SURVEY

## PART I: BACKGROUND INFORMATION

**Education Community:**

E1: Which best describes your current position in education?

- ☐ high school instructor
- ☐ high school supervisor/administrator
- ☐ technical institute supervisor/administrator
- ☐ technical institute instructor
- ☐ college instructor
- ☐ college administrator
- ☐ other instructor (specify) _____
- ☐ other administrator (specify) _____

E2: Which best describes your educational background?

(See list of Educational Areas of Study/Industry Types on the back of this form. Select the broad Educational Area which comes *closest* to your field of study and record the number you find next to it in the blank below.)

_____

NOTE: If you are a high school teacher, please indicate your content area.

**Business Community:**

B1: Which best describes your current position in the business community?

- ☐ association/Chamber staff
- ☐ owner
- ☐ manager/executive
- ☐ human resources (training/personnel)
- ☐ supervisor
- ☐ other (specify) _____

B2: In which type of industry do you work?

(See list of Educational Areas of Study/Industry Types on the back of this form. Select the broad Industry type which comes *closest* to your field of work and record the number you find next to it in the blank below.)

_____

B3: Which best describes the number of workers employed by your company throughout Georgia?

- ☐ 15 or fewer
- ☐ 16-50
- ☐ 51-100
- ☐ 101-500
- ☐ more than 500

**All Respondents:**

4. Which best describes the total number of years you have been employed in your present field?
   - ☐ less than 1 year
   - ☐ 1-5 years
   - ☐ 6-20 years
   - ☐ more than 20 years

5. Which best describes the highest level of formal education you have completed?
   - ☐ less than high school diploma
   - ☐ high school diploma or GED
   - ☐ post high school/ technical training
   - ☐ some college (no degree)
   - ☐ associate degree
   - ☐ bachelor's degree
   - ☐ graduate study, non-degreed (regardless of whether an advanced degree has been achieved, in other words, bachelor's degree plus fifteen or more hours)

6. Which best describes your racial/ethnic background?
   - ☐ Native American
   - ☐ Asian
   - ☐ Black
   - ☐ Hispanic
   - ☐ White
   - ☐ Other

7. Which is your gender?
   - ☐ Male
   - ☐ Female

8. In which category does your age fall?
   - ☐ 21 or under
   - ☐ 22-35
   - ☐ 36-50
   - ☐ over 50

9. Which region of the state best describes where you are employed?
   - ☐ North Georgia (I-20 Northward and all Metro Atlanta)
   - ☐ Middle Georgia (Region between I-20 and US 280)
   - ☐ South Georgia (US 280/Southward)

10. Which best describes the type of community in which you work?
    - ☐ Metropolitan Atlanta area
    - ☐ Suburban
    - ☐ Urban (Other than the Metro Atlanta area)
    - ☐ Rural

11. Are you currently employed in your field of formal education/training?
    - ☐ Yes
    - ☐ No

# Educational Areas of Study/Industry Types

Use for questions E2 and B2:

1--AGRICULTURE & RELATED

Including, as examples only:
- Agribusiness
- Farming
- Fishing
- Forestry
- Landscaping
- Horticulture
- Nursery management
- Mining

2--CONSTRUCTION

Including, as examples only:
- Architectural design
- Cabinetmaking
- Carpentry
- Drafting
- Masonry
- Plumbing
- Woodworking

3--GOVERNMENT/PUBLIC ADMINISTRATION

4--HEALTH-RELATED SERVICES

Including, as examples only:
- Community health services
- Dental services
- Emergency medical technology
- Medical office assistance
- Medical lab technologies
- Nursing services
- Ophthalmic dispensing
- Therapy services
- Radiologic technology
- Surgical technology

5--MARKETING

Including, as examples only:
- Advertising
- Hotel/motel
- Merchandising
- Sales/distribution
- Tourism
- Transportation

6--OFFICE & MANAGEMENT

Including, as examples only:
- Accounting
- Communication technologies
- Data processing/computer sciences
- Personnel services
- Secretarial science

7--PERSONAL SERVICES

Including, as examples only:
- Barbering
- Child care
- Consumer/home economics
- Cosmetology
- Food Service
- Interior decoration
- Institutional/home management

8--TECHNICAL & INDUSTRIAL SERVICES

Including, as examples only:
- Automotive services/repair
- Computer maintenance and repair
- Electrical/electronics
- Heating/air-conditioning
- Industrial maintenance technologies
- Machine repair
- Manufacturing
- Metalworking technologies
- Photography
- Printing & graphics
- Textiles

9--TELECOMMUNICATIONS/UTILITIES

10-TRANSPORTATION

Including, as examples only:
- Delivery of goods
- "People moving" (pilots, drivers, etc.)

11-COUNSELING

12-LANGUAGE ARTS/COMMUNICATIONS

13--SOCIAL STUDIES

14-MATHEMATICS

15-SCIENCE

16-EDUCATION

Including, as examples only:
- Early Childhood
- Elementary
- Middle School
- Special Education

17-EDUCATION ADMINISTRATION

18-OTHER (please specify)

_____

## WHO RECEIVED THE SURVEY?

The research staff at GAP determined that a total of 4,000 surveys must be mailed to educators and employers statewide to obtain a statistically valid sample. Hence, surveys were mailed to 1,500 Georgia educators and, because employers are typically less likely to respond, surveys were mailed to 2,500+ Georgia employers in various occupational fields.

Identifying the Educators

To determine which educators should receive the survey, three factors were considered: (1) the level of educational institution (secondary vs. postsecondary), (2) the type of educational institution (vocational vs. general academic) and (3) geographic location. Care was taken to ensure that all levels and types of educational institutions throughout the state were represented. Table 1 summarizes how the educators were distributed across type and level of educational institution.

Table 1: Distribution of Educators by School Type for GCVE Survey

| | | |
|---|---|---|
| Secondary<br>66.66%<br>1000 Surveys | Secondary Schools<br>Vocational<br><br>600 Surveys | Secondary Schools<br>General Academia<br><br>400 Surveys |
| Postsecondary<br>33.34%<br>500 Surveys | Postsecondary<br>Regents<br><br>300 Surveys | Technical Institutes and<br>Proprietary Schools<br><br>200 Surveys |

Total Number of Surveys - 1,500

To ensure that educators from different regions of the state were represented, five geographic regions were defined (see Appendix A) and population figures from the 1990 census were used to determine the target populations for each region. Table 2 depicts the targeted survey distribution.

Table 2: Distribution by Population and Region for Educators for GCVE Survey

| Region | Estimated Population | Population, Percent of Georgia as a Whole | Target Distribution to Educators |
|---|---|---|---|
| 1 | 2,302,706 | 34.6 % | 519 |
| 2 | 1,331,159 | 20.0 % | 300 |
| 3 | 1,622,456 | 24.4 % | 366 |
| 4 | 610,310 | 9.2 % | 138 |
| 5 | 789,145 | 11.8 % | 177 |
| State | 6,655,776 | 100.0 % | 1500 |

Special care was taken to ensure equitable distribution statewide among large and small schools in both metropolitan and rural areas. Table 3 shows target and actual distribution of educators by type and level of educational institution and region of the State. Multiple sources were used to identify educators matching all of the specifications.

Table 3: Actual and Target Distribution for Educators by Type and Level of Institution by Region

| Category | Region 1 | | Region 2 | | Region 3 | | Region 4 | | Region 5 | | All Regions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual | Target | Actual | Target | Actual | Target | Actual | Target | Actual | Target | Actual | Target |
| Postsecondary | | | | | | | | | | | | |
| Non-Regents | 108 | 103 | 61 | 60 | 69 | 73 | 24 | 27 | 35 | 36 | 297 | 299 |
| Regents | 76 | 70 | 39 | 40 | 48 | 49 | 17 | 18 | 21 | 24 | 201 | 201 |
| Secondary | | | | | | | | | | | | |
| General Academia | 133 | 138 | 79 | 80 | 103 | 98 | 37 | 38 | 49 | 47 | 401 | 401 |
| Vocational | 210 | 207 | 115 | 120 | 140 | 146 | 58 | 55 | 69 | 71 | 592 | 599 |
| Total | 527 | 518 | 294 | 300 | 360 | 366 | 136 | 138 | 174 | 178 | 1491 | 1500 |

Identifying the Employers

To determine which employers should receive the survey, three factors were considered: (1) business type, (2) size of business, and (3) geographic location. Using the twelve types of business identified by the Georgia Department of Labor and the same five geographic areas used to identify the educators (see Appendix A), the number of surveys which should be sent to each region by employment type was determined.

Again, multiple sources were used to identify employers who matched the pre-established specifications. However, it proved surprisingly difficult to provide for the adequate representation of retailers across specialties, e.g., grocers, hardware store owners, food retail managers. This was especially true in Region 4, which represented the southwest corner of the State.

Table 4 shows the targeted and actual distribution of businesses in each region. Care was

taken to ensure that the survey was distributed to large, medium, and small companies within each of the five specified geographic regions, paying special attention to ensuring representation from the businesses in smaller communities.

Table 4: Actual and Target Distributions for Business by Type and Region

| Category | Region 1 | | Region 2 | | Region 3 | | Region 4 | | Region 5 | | All Regions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 6 | 6 | 3 | 4 | 4 | 4 | 5 | 5 | 2 | 2 | 20 | 21 |
| Construction | 53 | 53 | 16 | 15 | 25 | 26 | 6 | 7 | 16 | 16 | 116 | 117 |
| Federal Government | 38 | 39 | 4 | 5 | 27 | 27 | 7 | 6 | 9 | 10 | 85 | 87 |
| Finance and Insurance | 87 | 87 | 11 | 11 | 22 | 22 | 6 | 6 | 9 | 9 | 135 | 135 |
| Local Government | 99 | 99 | 41 | 41 | 64 | 64 | 30 | 30 | 31 | 32 | 265 | 266 |
| Manufacturing | 124 | 124 | 129 | 129 | 132 | 129 | 48 | 49 | 57 | 56 | 490 | 487 |
| Mining | 0 | 1 | 2 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | 5 | 5 |
| Retail Trade | 214 | 213 | 53 | 58 | 100 | 94 | 38 | 35 | 51 | 52 | 456 | 452 |
| Services | 294 | 294 | 53 | 49 | 94 | 92 | 29 | 28 | 47 | 46 | 517 | 509 |
| State Government | 34 | 34 | 8 | 9 | 28 | 28 | 9 | 10 | 11 | 11 | 90 | 92 |
| Transportation | 109 | 108 | 12 | 12 | 16 | 16 | 7 | 7 | 11 | 12 | 155 | 155 |
| Wholesale Trade | 118 | 118 | 17 | 17 | 21 | 21 | 11 | 11 | 10 | 10 | 177 | 177 |
| All Categories | 1,176 | 1,176 | 349 | 351 | 536 | 526 | 196 | 194 | 254 | 256 | 2,511 | 2,503 |

| Actual | Target |
|---|---|

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Funding support for this publication was provided as part of a grant to the Georgia Council on Vocational Education from the Carl D. Perkins Vocational Education Act.

The Georgia Council on Vocational Education is a private sector led citizens advisory council. Members are appointed by the Governor and represent business, industry, labor, agriculture and education. The primary responsibility of the Council is to advise the Governor, the Governor's Employment and Training Council, the State Board of Education, the State Board of Technical and Adult Education, the business community, and the general public of the state on policies and initiatives that should be undertaken to strengthen and modernize vocational-technical education.

The Georgia Council on Vocational Education does not discriminate on the basis of age, sex, race, color, religion, national origin or handicap in its educational programs, activities, or employment policies.

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